

Idaea boeklini sp. n. from South Europe, with notes
on the nomenclature and systematics of the
Idaea virgularia (HÜBNER) species group
(Lepidoptera : Geometridae)

Erik VON MENTZER

Örnstigen 14, S-183 50 Täby, Sweden.

Summary

Idaea virgularia (HÜBNER [1799]) is re-established for *I. seriata* (SCHRANK 1802), *I. herbuloti* (AGENJO 1952) is synonymized with *I. minuscularia* (RIBBE 1912) stat. n., *I. boeklini* sp. n. is described and *I. camparia europaea* (WEHRLI 1934) is synonymized with *I. camparia camparia* HERRICH-SCHÄFFER [1852]).

Zusammenfassung

Idaea virgularia (HÜBNER [1799]) wird für *I. seriata* (SCHRANK 1802) wiederhergestellt, *I. herbuloti* (AGENJO 1952) wird mit *I. minuscularia* (RIBBE 1912) stat. n. synonymisiert, *I. boeklini* sp. n. wird beschrieben und *I. camparia europaea* (WEHRLI 1934) wird mit *I. camparia camparia* HERRICH-SCHÄFFER [1852]) synonymisiert.

Idaea ibizaria MENTZER (complete references below) was compared in the original description with *I. albitorquata* (PÜNGELER) as it belongs to the same group, with a relatively slender aedeagus and extremely long cornutus : the group XX of STERNECK (1940 : 102, 153, as *Sterrha*). *I. albitorquata* was identified from the original description of the imago and the male genitalia figured in STERNECK (1940 : pl. 2, fig. 24, aedeagus). The subsequent taking of a species similar to *I. albitorquata* and with indistinguishable aedeagus raised the question as to which of the two species was the real *I. albitorquata*, the one I had figured under this name in the original description of *I. ibizaria* or the new one. The only possibility to solve the problem was to study material of *I. albitorquata*, especially females, of which the genitalia have never been published. The result of this study was that the species I had figured as *I. albitorquata* is not that species, but one that I will describe here as *I. boeklini* sp. n. The other species is the real *I. albitorquata*. The misidentification of my *I. albitorquata* nec PÜNGELER was due to the fact that *I. albitorquata* PÜNGELER was described from some ab ovo reared specimens,

which are darker than those collected in the field and to the fact that the aedeagi of the two species are exactly alike.

STERNECK included *I. seriata* (SCHRANK 1802), *I. fathmaria* (OBERTHÜR 1876) and *I. albitorquata* (PÜNGELER 1908) in his group XX (as *Sterrha*). In the original description of *I. ibizaria* MENTZER 1980 I added this species, as well as *I. euphorbiata* (BALESTRE 1906) and *I. herbuloti* (AGENJO 1952) to this group. We can now add *I. carvalhoi* HERBULOT 1979, which was unknown to me at that time, and *I. boeklini* sp. n.

My specimens of *I. euphorbiata* were identified from a figure in OBERTHÜR (1916 : pl. 401, fig. 3451) and another in CULOT (1917-19 : pl. 6, fig. 121). The original description is insufficient, corresponding best to *I. laevigata* (SCOPOLI). The figure in OBERTHÜR shows an ochreous specimen and that in CULOT a pale greyish specimen with a faint violet tinge. HERBULOT (1962 : 154 ; 1963 : 19) synonymized *I. euphorbiata* with *I. belemiata helianthemata* (MILLIÈRE 1870), but without arguments. STERNECK (1940 : 101) had already synonymized *I. helianthemata* with *I. belemiata* (MILLIÈRE 1868), also without arguments. I am not convinced of the correctness of these synonymies, not finding any similarities in the external appearance of these three taxa. Unfortunately, my material is insufficient for further studies.

The group XX of STERNECK can for practical reasons be divided into the following three subgroups :

1. Pale species (white, whitish, pale ochreous) : *I. seriata* (SCHRANK) (correctly : *I. virgularia* (HÜBNER)), *I. herbuloti* (AGENJO) (correctly : *I. minuscularia* (RIBBE)), *I. albitorquata* (PÜNGELER), *I. ibizaria* MENTZER and *I. boeklini* sp. n.
2. Ochreous, slightly reddish species : *I. euphorbiata* (BALESTRE).
3. Black species : *I. fathmaria* (OBERTHÜR) and *I. carvalhoi* HERBULOT.

For the description of *I. boeklini* sp. n. it is sufficient to make a comparison with the species of the subgroup 1. The various names erected in this subgroup will be discussed and *I. boeklini* sp. n. described.

Idaea TR.

Idaeae TREITSCHKE 1825, Die Schmetterlinge von Europe 5 (2) : 446. Type species : *Phalaena aversata* LINNAEUS 1758 (= *Idaea aversata* (L.)).

For *Acidalia* TREITSCHKE 1825, *Sterrha* HÜBNER 1825 and *Ptychopoda* CURTIS 1826, which have been used earlier as generic names for species treated here, see FLETCHER (1966 : 12 ; 1979 : 55, 195, 179). Another six generic names have been erected, all junior synonyms and seldom used.

Idaea virgularia (HÜBNER)

Figs. 1-2, 13, 19.

Phalaena albulata HUFNAGEL 1767, Berlinisches Magazin 4 : 616. Type locality : [Germany] : "Berliner Gegend". — Identification through WERNEBURG 1864, Beiträge zur Schmetterlingskunde 1 : 229 : 266. Identification plausible but not demonstrable.

Phalaena incanata LINNAEUS sensu [DENIS & SCHIFFERMÜLLER] 1775, Ankündigung eines systematischen Werkes der Schmetterlinge der Wiener Gegend : 117. Invalid misidentification and junior primary homonym of *Phalaena incanata* LINNAEUS 1758, Systema Naturae (Edn 10) 1 : 528 (= *Scopula incanata* (L.), Geometridae).

Geometra virgularia HÜBNER [1799], Sammlung europäischer Schmetterlinge 5 : pl. 19, fig. 104. Type locality not stated (no text).

Geometra incanaria HÜBNER [1799], Sammlung europäischer Schmetterlinge 5 : pl. 20, fig. 106. Type locality not stated (no text).

Phalaena seriata SCHRANK 1802, Fauna boica 2 (2) : 57. Type locality : [Germany : Bavaria :] "Ingolstadt".

Acidalia canteneraria BOISDUVAL 1840, Genera et Index methodicus europaeorum Lepidopterorum : 222. Type locality : "Galloprov." (= France : Provence).

Idaea incanata australis ZELLER 1847, Isis [40] : 511. Type locality : "Italien : Messina, Syracus, Catania, Neapel".

Idaea calcearia ZELLER 1849, Ent. Ztg. (Stettin) 10 : [380] (index with binominal nomenclature) ; description in ZELLER 1849, ibid. 10 : 217, text without consistent binominal nomenclature (ICZN Art. 11 (c)). Type locality : "Italien : [Toscana :] Livorno, Antignano, Posignano" (Posignano probably misprint for Rosignano).

Acidalia paleacata GUENÉE 1857 in BOISDUVAL & GUENÉE, Histoire naturelle des Insectes 9 : 478. Type locality : [France :] "Îles d'Hyères".

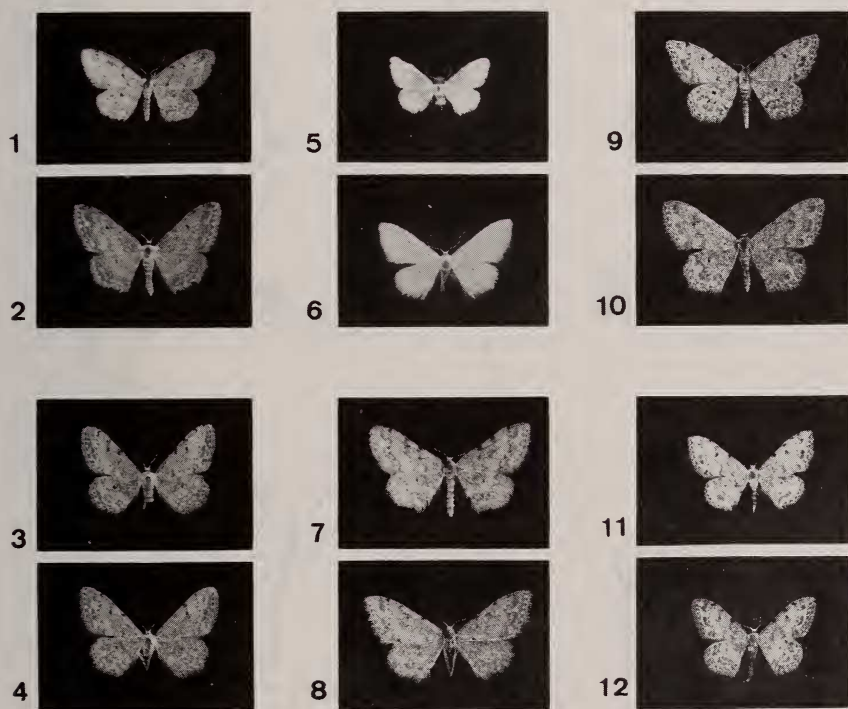
Four other available names have been erected for the species but not cited here, being of doubtful identification or of no relevance. *Phalaena incanata* [DENIS & SCHIFFERMÜLLER] and *Geometra incanaria* HÜBNER have been included in the synonymic list, having been used occasionally by later authors, and *Idaea incanata australis* ZELLER because of sympatry with *Idaea boeklini* sp. n. on Sicily.

The citation "*virgularia* sensu HÜBNER" in recent works is formally incorrect as there is no other *virgularia*. Even if it is probable that the name *Geometra virgularia* was meant by HÜBNER as an emendation of *Phalaena virgulata* [DENIS & SCHIFFERMÜLLER] (= *Scopula virgulata* ([D. & S.])) and thus would be a misidentification, this would be a subjective interpretation as HÜBNER cited no author. The usage of the name *I. seriata* (SCHRANK) for the species probably dates from PROUT (1913 : 112 as *Ptychopoda seriata*).

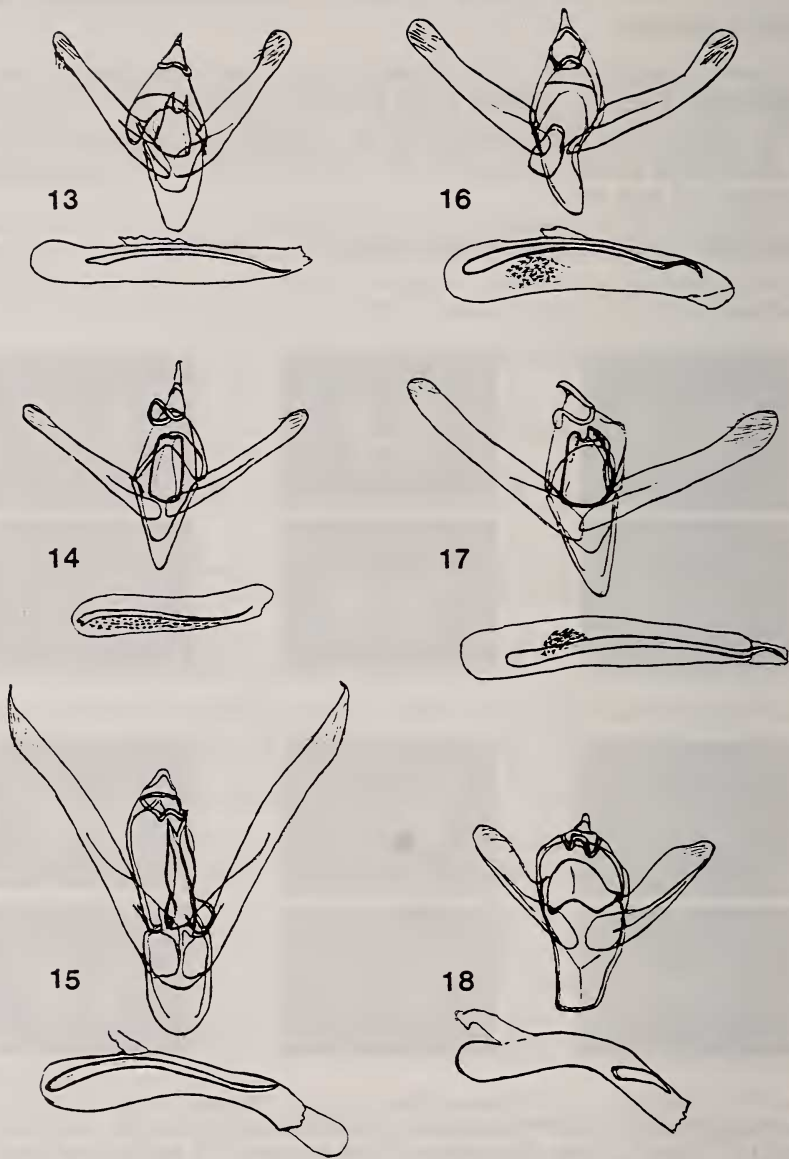
STAUDINGER (1901 : 268) used the name *Geometra virgularia* HÜBNER as *Acidalia virgularia*.

MATERIAL EXAMINED : 62 ♂♂♀♀, Spain, France, Italy, Yugoslavia, Greece, Switzerland, England, Sweden (with Mallorca, Corsica, Sicily, Gotland), several collectors, all specimens in coll. E. v. MENTZER. Three male and two female genitalia preparations in coll. E. v. MENTZER, two of which are shown here (figs. 13 and 19).

DISTRIBUTION : Throughout Europe south of 61° latitude.



Figs. 1-12. *Idaea* spp. — 1. *I. virgularia* (HBN.) ♂, Italy : Piedmont : Upega 6.VII.1954. — 2. *I. virgularia* (HBN.) ♀, Sweden : Uppland : Näsbypark 4.VII.1973. — 3. *I. albitorquata* (PGLR.) ♂ "Cotype", Greece : Peloponnese : Tyrins ab ovo. — 4. *I. albitorquata* (PGLR.) ♀, "Cotype", Greece : Peloponnese : Tyrins ab ovo. — 5. *I. minuscularia* (RIBBE) ♂, Portugal : Algarve : São Refael 10-22.IX.1979. — 6. *I. minuscularia* (RIBBE) ♀, Spain : Mallorca : Capdella 28.V.1975. — 7. *I. ibizaria* MENTZER ♂ paratype, Spain : Ibiza 7.V.1975. — 8. *I. ibizaria* MENTZER ♀, Spain : Ibiza 8.V.1975. — 9. *I. boeklini* sp. n. ♂ paratype, Greece : Crete : Gones 28.V.1986. — 10. *I. boeklini* sp. n. ♀ holotype, Italy : Sicily : Taormina 28.IV.1950. — 11. *I. camparia* (H.-S.) ♂, Bulgaria : Tchuricene (Petrič) 15.IX.1983. — 12. *I. camparia* (H.-S.) ♀, Bulgaria : Kožuch (Petrič) 14.IX.1983. — Life size.



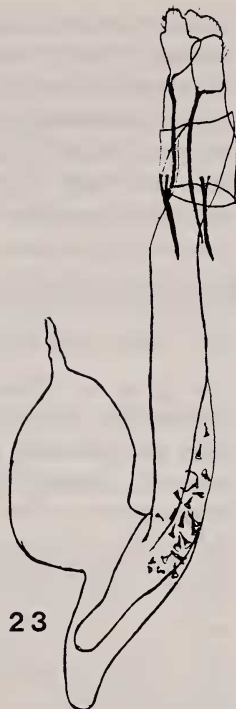
Figs. 13-18. Male genitalia in *Idaea* spp. — 13. *I. virgularia* (HBN.), Italy : Sicily : Taormina 23.IV.1950, prep. No. 7.048. — 14. *I. minuscularia* (RIBBE), specimen fig. 5, prep. No. 12.064. — 15. *I. ibizaria* MENTZER paratype, Spain : Ibiza 5.V.1975, prep. No. 7.063. — 16. *I. albitorquata* (PGLR.) "Cotype", specimen fig. 3, prep. No. 11.085. — 17. *I. boeklini* sp. n. paratype, Italy : Sicily : Taormina 4.V.1950, prep. No. 7.045. — 18. *I. camparia* (H.-S.), Bulgaria : Ribnik 3.IX.1983, prep. No. 11.003. — $\times 24$.



19



21



23



20



22



24

Figs. 19-24. Female genitalia in *Idaea* spp. — 19. *I. virgularia* (HBN.), Switzerland : Zürich 13.VI.1952, prep. No. 11.012. — 20. *I. minuscularia* (RIBBE), specimen fig. 6, prep. No. 12.065. — 21. *I. albitorquata* (PGLR.), specimen fig. 4, prep. No. 11.086. — 22. *I. boeklini* sp. n. paratype, Italy : Sicily : Taormina 7.V.1950, prep. No. 8.037. — 23. *I. ibizaria* MENTZER, specimen fig. 8, prep. No. 11.040. — 24. *I. camparia* (H.-S.), Bulgaria : Asenovgrad 12.IX.1983, prep. No. 11.004. — × 24, ventral view (right side in the figures is right side on the specimens).

DESCRIPTION, male and female (figs. 1-2) : Wingspan : males 14.0-18.5 mm, females 17.6-21.0 mm, only extreme values measured. Wings moderately lanceolate ; vertex, patagia and tegulae white ; thorax, abdomen and wings white to ochreous grey, the darker colours prevailing at greater altitudes and latitudes ; collar black, contrasting strongly with white vertex and patagia ; body and wings scattered dorsally with dark brown scales, more densely distributed on darker specimens ; cross-lines thin, well separated ; postmedian line with streaks on veins, acutely bent inwardly in front of discal spot ; discal spot dark grey, inconspicuous but sharp ; fringes as ground colour, in the white or whitish (southern) populations with pale brown dots at tip of veins, these dots absent in the darker (northern) populations.

The figure in HÜBNER for *Geometra virgularia* shows a dark specimen, characteristic of the populations of the northern part of Europe, whereas his figure for *Geometra incanaria* is doubtful even if generally attributed to *I. virgularia*, showing a pale specimen with sharp cross-lines never seen in *I. virgularia*.

The white or nearly white populations of southern Europe, with dots on the fringes, correspond to the names *Acidalia canteneraria* BOISDUVAL, *Idaea calcearia* ZELLER and *Acidalia paleacata* GUENÉE.

Idaea incanata australis ZELLER corresponds well to my series from Italy : Sicily : Taormina (11 ♂♂♀♀), with milky white wings and pale but very distinct dots on the fringes.

MALE GENITALIA (fig. 13) : Clasp structure of the most usual type within *Idaea*, with club-shaped valvae ; juxta subrectangular, sharply bifurcate dorsally ; aedeagus rather slender, with one extremely long cornutus.

Genitalia figured in Pierce (1914 : pl. 18 as *virgularia*) and aedeagus in Sterneck (1940 : pl. 1, fig. 23).

FEMALE GENITALIA (fig. 19) : Ductus bursae broad, about one and a half times longer than wide ; bursa rounded, slightly oval, with two groups of spines of unequal length ; a long tubular prolongation of bursa from fundus ; ductus seminalis on left side, arising from middle of bursa ; apophyses anteriores short, apophyses posteriores long.

Genitalia figured in Pierce (1914 : pl. 18 as *virgularia*).

Idaea albitorquata (PÜNGELER)

Figs. 3-4, 16, 21.

Acidalia albitorquata PÜNGELER 1908, Dt. ent. Z. Iris 21 : 293, pl. 4, fig. 10 ♂. Type locality : [Greece :] "Peloponnes : Tirnys" (Tirnys misprint for Tiryns on the type-labels).

MATERIAL EXAMINED: 1 ♂, "Graecia Tiryns gen. III ab ovo 1.10.92 P. Püng.", "Cotype albitorquata Püng. ♂" (red label) (fig. 3), genitalia preparation E. v. MENTZER No. 11.085 (fig. 16). — 1 ♀, "Graecia Tiryns gen. III ab ovo 2.10.92 P. Püng.", "Cotype albitorquata Püng. ♀" (red label) (fig. 4), gen. prep. E. v. MENTZER No. 11.086 (fig. 21). — 1 ♀, "Graecia Tiryns gen. II ab ovo 12.7.92 P. Püng.", "Cotype albitorquata Püng. ♀" (red label), gen. prep. E. v. MENTZER No. 11.087. — Specimens and preparations in coll. Humboldt-Universität, Berlin.

3 ♂♂ 13 ♀♀, Greece, South Bulgaria, Yugoslavia : Macedonia, leg. and in coll. E. v. MENTZER.

DISTRIBUTION : Greece, Bulgaria, south Yugoslavia.

DESCRIPTION, male and female (based on material in coll. E. v. MENTZER) : Wingspan: males 17.7-20.5 mm (\bar{x} = 18.67 mm, n = 3), females 17.9-22.7 mm (\bar{x} = 20.15 mm, n = 13). Wings less lanceolate than in *I. virgularia*, forewings more triangular ; entire body and wings snow-white, with scattered black scales ; wing-pattern as in *I. virgularia* but postmedian line less acutely bent inwardly in front of discal spot than in *I. virgularia* ; fringes without dots.

In the type material available body and wings are whitish to pale grey. The collar was originally described as whitish, whereas it is snow-white on captured specimens, both fresh and worn. The discrepancy is evidently due to the fact that the original description was based on reared material. The difference in colour of the dark scales between *I. albitorquata* (black) and *I. virgularia* (brown) is very evident under the microscope.

MALE GENITALIA (fig. 16) : Clasp structure as in *I. virgularia* ; juxta without bifurcation ; aedeagus rather slender, with one extremely long cornutus, sinuous at tip, and a field of innumerable minute spines in the basal region of cornutus.

Genitalia figured in AGENJO (1952 : pl. 20, fig. 8) and aedeagus in STERNECK (1940 : pl. 2, fig. 24).

FEMALE GENITALIA (fig. 21) : Ductus bursae very long, posteriorly narrow, anteriorly slightly wider, with abundant spines ; bursa as a thin-walled long bubble connected with anterior third of ductus on left side and directed posteriorly, nearly parallel with ductus, continued anteriorly with a tubular prolongation ; ductus seminalis leading from posterior tip of bursa ; apophyses anteriores short, apophyses posteriores long.

Idaeus minuscularia (RIBBE) stat. n., comb. n.

Figs. 5-6, 14, 20.

Acidalia virgularia minuscularia RIBBE 1912, Beiträge zu einer Lepidopteren-Fauna von Andalusien (Süd-Spanien), Makrolepidopteren. 395 pp. — Dt. ent. Z. Iris 23 : 305. Type locality : “Mauretanien, Süd-Andalusien, Süd-Murcia”.

Sterrhia herbuloti AGENJO 1952, Fáunula lepidopterológica almeriense : 187-189, pl. 6, figs. 19-20. Type locality : “España : Andalucía : Almería”. Syn. n.

RIBBE utilized for the name *minuscularia* a name which was used in a sales list of the firm Staudinger & Bang-Haas for a taxon which they probably intended to describe later. It is not clear which material RIBBE had before him. No specimens labelled as types have been found in the STAUDINGER collection at the Humboldt-Universität at Berlin (Dr. Hannemann in litt.) or at the Museum für Tierkunde at Dresden, where a part of the collection of RIBBE is deposited (Dr. Krause in litt. : only Lycaenidae). The description of *A. v. minuscularia* agrees excellently with the description of *Sterrhia herbuloti* and with my material. RIBBE's statement that the male of *A. v. minuscularia* is barely half the size of *A. v. virgularia* is an exaggeration. This probably refers to the area of the wings. The taxon was also treated in PROUT (1913 : 113), which should have made AGENJO suspicious or at least led him to comment on it. The taxon was described by RIBBE as a variety. As RIBBE did not use the concept of subspecies (the word is met with only in citations), the word “variety” can denote a subspecific as well as an infrasubspecific rank. As the variety was referred to a greater geographic region, the name must be considered to be available. RIBBE also reported *I. virgularia virgularia* (as *Acidalia virgularia*) and *I. virgularia australis* (as *Acidalia virgularia australis*) from Granada.

MATERIAL EXAMINED : 1 ♂, Spain : Andalusia : Almoraima 23.IX.1981, leg. E. v. MENTZER. — 1 ♂, Portugal : Algarve : São Rafael 10-22.IX.1979, leg. B. GULLANDER (fig. 5), gen. prep. E. v. MENTZER No. 12.064 (fig. 14). — 1 ♂, Spain : Andalusia : Castellar de la Frontera 24.IX.1981, leg. A. MOBERG, gen. prep. E. v. M. No. 12.062. — 2 ♂♂, Spain : Mallorca : Porto Polensa 16.V.1986, leg. Å. SELLING, gen. prep. E. v. M. No. 11.077. — 1 ♀, Spain : Andalusia : Orjiva 18.VII.1980, leg. A. MOBERG, gen. prep. E. v. M. No. 12.063. — 2 ♀♀, Spain : Mallorca : Capdella 26 and 28.V.1979, leg. S. TORSTENIUS (fig. 6), gen. prep. E. v. M. No. 12.065 (fig. 20). — All specimens in coll. E. v. MENTZER.

DISTRIBUTION : Spain, Portugal, North Africa. Probably new for Portugal and Mallorca.

DESCRIPTION :

Male (fig. 5) : Wingspan 13.0-16.3 mm (\bar{x} = 14.76 mm, n = 5). Wings slightly more pointed than in *I. virgularia* ; body with collar and wings white with scattered black scales ; wing-pattern as in *I. virgularia* but antemedian line diffuse, postmedian line formed only by dots on the veins, sometimes hardly discernible ; discal spot small but evident ; fringes with dots at tip of veins.

Female (fig. 6) : Wingspan 17.9-18.2 mm (\bar{x} = 17.33 mm, n = 3), thus larger than in the male ; body and wings white, as in the male, but collar pale ochreous ; wings rather lanceolate, pattern mostly obsolete but discal spot evident ; fringes with dots as in the male.

MALE GENITALIA (fig. 14) : Clasp structure almost as in *I. virgularia* and in *I. albitorquata*, valvae more slender and uncus longer, juxta rectangular, rather long ; aedeagus with long cornutus as in *I. virgularia* and with a long field of innumerable minute spines along cornutus.

The male genitalia are figured in the above cited original description of *Sterrrha herbuloti* AGENJO (pl. 20, fig.7). The cornutus is described and figured as being shorter than in *I. virgularia*, which my preparations have shown to depend on individual variation.

FEMALE GENITALIA (fig. 20) : Similar to those of *I. virgularia* but proportionally larger ; ductus bursae longer, bursa pear-shaped, tapering in anterior direction, with a long group of spines on left side ; ductus seminalis on left side, arising from middle of bursa ; apophyses anteriores of moderate length, apophyses posteriores longer.

Idaea ibizaria MENTZER

Figs. 7-8, 15, 23.

Idaea ibizaria MENTZER 1980, Ent. scand. 11 : 206-208, figs. 1-2. Type locality : "Spain : Balearic Isles : Ibiza".

MATERIAL EXAMINED : 1 ♂, holotype, Spain : Balearic Isles : Ibiza 7.V.1975. — 3 ♂♂ paratypes, same locality 5-8.V.1975 (fig. 7), gen. prep. E. v. M. Nos. 7.063 (fig. 15) and 11.090. — 1 ♀, same locality 8.V.1975 (fig. 8), gen. prep. E. v. M. No. 11.040 (fig. 23). — All specimens leg. S. TORSTENIUS, in coll. E. v. MENTZER.

DISTRIBUTION : Known only from Ibiza.

DESCRIPTION :

Male (fig. 7) : Wingspan 19.5-21.5 mm (\bar{x} = 20.52 mm, n = 4). Wings moderately lanceolate, as in *I. virgularia* ; body and wings pale ochreous with

thinly scattered brown scales ; wing-pattern pale, diffuse ; cross-lines on forewings with pale patches on costa ; discal spot small, pale ; fringes without dots.

The original description included only males. A female from the same locality was found later in a quantity of unmounted material.

Female (fig. 8) : Wingspan 21.7 mm. Wing-shape and colours as in the male ; wing-pattern slightly reduced, which may be circumstantial.

MALE GENITALIA (fig. 15) : Valvae longer than usual in *Idaea*, with parallel sides, apex pointed, tip bent dorsad ; juxta extremely long, sharply bifurcate dorsally, nearly touching the gnathos, allowing little space for the aedeagus ; aedeagus rather slender, with a long cornutus, slightly sinuous at tip, as in *I. virgularia*.

Genitalia figured in the original description (fig. 6), in which the word transtilla was wrongly used for the juxta. A further preparation was made later, leaving the aedeagus in place to check that its position really is so high.

FEMALE GENITALIA (fig. 23) : Similar to those in *I. albitorquata* ; ductus bursae very long, cylindrical, with spines anteriorly ; bursa a thin-walled bubble connected with anterior part of ductus on left side and directed posteriorly, shorter and larger than in *I. albitorquata*, continued anteriorly with a large sack-like prolongation ; ductus seminalis leading from posterior tip of bursa ; apophyses long.

Idaea boeklini sp. n.

Figs. 9-10, 17, 22.

TYPE LOCALITY : Italy : Sicily : Taormina.

ETYMOLOGY : Named after Per-Erik BÖKLIN, Swedish painter and entomologist, on whose material the initial studies were made.

TYPE MATERIAL : Holotype ♀, Italy : Sicily : Taormina 28.IV.1950, leg. E. v. MENTZER (fig. 10). — Paratypes : 1 ♂ 4 ♀♀, same locality 4-7.V.1950, leg. E. v. M., gen. prep. Nos. 7.045 ♂ (fig. 17) and 11.037 ♀ (fig. 22). — 2 ♂♂, Greece : Crete : Kandanos 1.IV.1954, leg. P.-E. BÖKLIN, gen. prep. E. v. M. No. 8.038. — 1 ♀, Greece : Crete : Agia Sillas 1.VI.1986, leg. E. v. M. — 1 ♀, Greece : Crete : Melidoni 23.V.1986, leg. E. v. M. — 1 ♂ 1 ♀, Greece : Argolis : Hydra 1 and 11.V.1954, leg. P.-E. BÖKLIN, gen. prep. E. v. M. Nos. 7.043 ♂ and 8.037 ♀. — 3 ♀♀, Greece : Phokis : Delphi 27.IV.1985 and 15.V.1986, leg. E. v. M., gen. prep. E. v. M. Nos. 11.096 and 12.001. — 2 ♀♀, Yugoslavia : Croatia : Obrovac 19.V.1979, leg. E. v. M., gen. prep. E. v. M. No. 11.035.

DESCRIPTION, male and female (figs. 9-10): Wingspan: males 20.8-21.8 mm (\bar{x} = 21.25 mm, n = 4), females 19.0-23.5 mm, holotype 21.3 mm (\bar{x} = 20.86 mm, n = 13). Wings moderately lanceolate; body and wings white, with scattered brown scales; collar pale ochreous to brown; wing-pattern pale greyish ochreous, diffuse, sometimes obsolete, terminal streaks always present; pale ochreous dots on fringes. Clearly distinguished from *I. albitorquata* by the brown, not black scales, the darker, not snow-white collar and the more diffuse pattern; from the sympatric *I. virgularia australis* by the white, not creamy ground colour and the paler, not black collar.

MALE GENITALIA (fig. 17): Clasp structure as in *I. virgularia* and *I. albitorquata*; juxta subrectangular, slightly larger, dorsal bifurcation not so deep or pointed as in *I. virgularia*; aedeagus rather slender, with an extremely long cornutus, sinuous at tip, with field of innumerable minute spines in the basal region of cornutus, indistinguishable from that of *I. albitorquata*.

FEMALE GENITALIA (fig. 22): Ductus bursae of moderate length and width; bursa oval, with a variable spiral spiny rod; ductus seminalis leading from bursa at right side; apophyses anteriores short, apophyses posteriores long.

Idaea camparia (HERRICH-SCHÄFFER)

Figs. 11-12, 18, 24.

Acidalia camparia HERRICH-SCHÄFFER [1852], Systematische Bearbeitung der Schmetterlinge von Europa 6: 65, pl. 76, fig. 465 ♀. Type locality: [Turkey:] "Smyrna".

Acidalia sodaliaria HERRICH-SCHÄFFER [1852], ibid. 6: 65, pl. 76, fig. 466 ♂. Type locality: "Fiume" (now Yugoslavia: Croatia: Rijeka).

Ptychopoda camparia europaea WEHRLI 1934, Mitt. münch. ent. Ges. 24: 9. Type locality: "Europa". — Synonym of *Acidalia camparia camparia* HERRICH-SCHÄFFER, syn. n.

MATERIAL EXAMINED: 17 ♂♂ 16 ♀♀, Yugoslavia, Bulgaria, Greece with Crete, leg. and in coll. E. v. MENTZER (figs. 11-12). Six genitalia preparations, ♂ and ♀, in coll. E. v. MENTZER (figs. 18, 24).

Sterneck (1940: pl. 2, fig. 49 aedeagus) placed *I. camparia*, with *I. sodaliaria* as a synonym, in his group XXII, which is characterized by a short and thick cornutus. The clasp structure also differs from that of group XX, the valvae being shorter and broader (fig. 18). These two names have often been considered to denote two different species, but the male figured in HERRICH-SCHÄFFER as *Acidalia sodaliaria* is only the rarer pale form of *A. camparia* with reduced pattern, which also occurs in the female. The name *Ptychopoda camparia europaea* WEHRLI corresponds to this pale form, which

occurs here and there together with the commoner darker form and with intermediates.

Idaea camparia is most similar to *I. virgularia*, but easy to recognize by the shorter wings, which are less lanceolate, and by the well developed shading distal to the postmedian line, squarely cut in two places.

The species is treated here because the female genitalia (fig. 24) are not distinguishable from those of *Idaea boeklini* sp. n. (fig. 22). The grouping of species in Sterneck (1940-1941) according to similarities of the male genitalia, made for practical purposes, can evidently not be retained from a scientific point of view because of the similarity of the female genitalia of *I. boeklini* and *I. camparia*.

Acknowledgements

My best thanks to Dr. HANNEMANN at the Humboldt-Universität at Berlin for allowing me to dissect type specimens of *I. albitorquata* and for valuable information, to Dr. KRAUSE at the Staatliches Museum für Tierkunde at Dresden for information on the material of RIBBE and to Mr. Per-Erik BÖKLIN for the gift of various interesting material from Greece.

References

- AGENJO, R. 1952. Fauna lepidopterológica almeriense. 370 pp.
- CULOT, J. 1917-19. Noctuelles et Géomètres d'Europe 3. 269 pp.
- FLETCHER, D. S. 1966. Some changes in the Nomenclature of British Lepidoptera. *Ent. Gaz.* 17 : 9-18.
- FLETCHER, D. S. 1979. The generic Names of Moths of the World 3. 243 pp.
- HERBULOT, C. 1962. Mise à jour de la Liste des Geometridae de France. *Alexanor* 2 : 147-154.
- HERBULOT, C. 1963. Mise à jour de la liste des Geometridae de France. *Alexanor* 3 : 17-24.
- OBERTHÜR, C. 1916. Études de Lépidoptérologie comparée 12. 527 pp.
- PIERCE, F. N. 1914. The Genitalia of the Group Geometridae of the Lepidoptera of the British Islands. xxix + 84 pp.
- PROUT, L. B. 1912-16 in Seitz, A. Die Gross-Schmetterlinge der Erde 1 (4). v + 479 pp.
- STAUDINGER, O. 1901 in STAUDINGER & REBEL. Catalog der Lepidopteren des palaearktischen Faunengebietes 1. xxx + [ii] + 411 pp.
- STERNECK, J. 1940. Versuch einer Darstellung der systematischen Beziehungen bei den palaearktischen Sterrhinae (Acidaliinae) 1-2. *Z. wien. Ent.-Ver.* 25 : 6-218, interrupted pagination.
- STERNECK, J. 1941. Versuch einer Darstellung der systematischen Beziehungen bei den palaearktischen Sterrhinae (Acidaliinae) 2 (continuation) — 6. *Z. wien. Ent.-Ver.* 26 : 17-262, interrupted pagination.